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(NE)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Mathew et al.

Serial No.: 09/494,837 Group Art Unit: 1733

Filed: 01/31/00 Examiner: J. Aftergut

For: METHOD OF MAKING FLUOROCARBON COATED BRAIDED HOSE ASSEMBLIES

Attorney Docket No: 0153.00084

AFFIDAVIT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Norman S. Martucci, being duly sworn, do hereby say that:

1. I am co-inventor of the above-captioned invention.

2. I am skilled in the art of hose construction and have worked extensively in the development of a hose assembly, including coated braided hose assemblies and methods of manufacturing the same.

3. Teleflex, Inc., the Assignee of the presently pending application, manufactures two hose assemblies. The first assembly is made in accordance with United States Patent No. 5,142,782 in that the Teflon hose is extruded, a braid is applied to the Teflon tube, and a dispersion including a fluorocarbon polymer material therein is applied to the braided layer. Teleflex, Inc. also manufactures a second hose in accordance with the steps and claims set forth in the above captioned patent application. That is, a dispersion is applied prior to the braiding step and after the braiding step. The "double dip" method of the present invention was designed to overcome problems of uniformity of

Before braiding.

Unsigned Declaration

bonding and increased flexibility. The following data demonstrates that although the "single dip" method of the '782 patent provides a higher bond strength between the fiber glass outer braid and the Teflon inner tube, a "double dip" method of the present invention unexpectedly produced less variation in the strength of the bond and also was unexpectedly more flexible than the "single dip" hose of the '782 patent.

4. The following data presented in the attached exhibits demonstrate the unexpected results obtained by the "double dip" method of the present invention.

Referring specifically to the attached exhibits, the document dated 9/8/92 shows data for single dip. The document dated 9/9/92 for Part No.: TFH-1001-060 show a peel strength for the single dip to be 7.41 pounds plus or minus 1.26 pounds. Hence, there is great variation and higher peel strength. The document in the form of the table dated 6/11/96 and entitled 1995 Peel Data For TFH-1002-050 shows the uniform peel strength data for the tubes resulting from the double dip process. The peel strength is lower (between 3 and 4 pounds) but the variation is tighter than that of the single dip process.

5. Automotive customers have made the "double dip" hose of the present invention a significant commercial hose device based upon the characteristics of the "double dip" hose having less variation in strength of the bond and being more flexible.

The undersigned declares further all statements made herein of his knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful and false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

____

Norman S. Martucci

Date: August ___, 2001

STATE OF MICHIGAN)
) ss.
COUNTY OF MACOMB)

On this _____ day of _______________________________, 2001, personally appeared before me, NORMAN S. MARTUCCI to me known to be the person named in and who executed the above instrument, and acknowledged that he executed the same for the uses and purposes therein mentioned.

____

Notary Public

My Commission Expires:

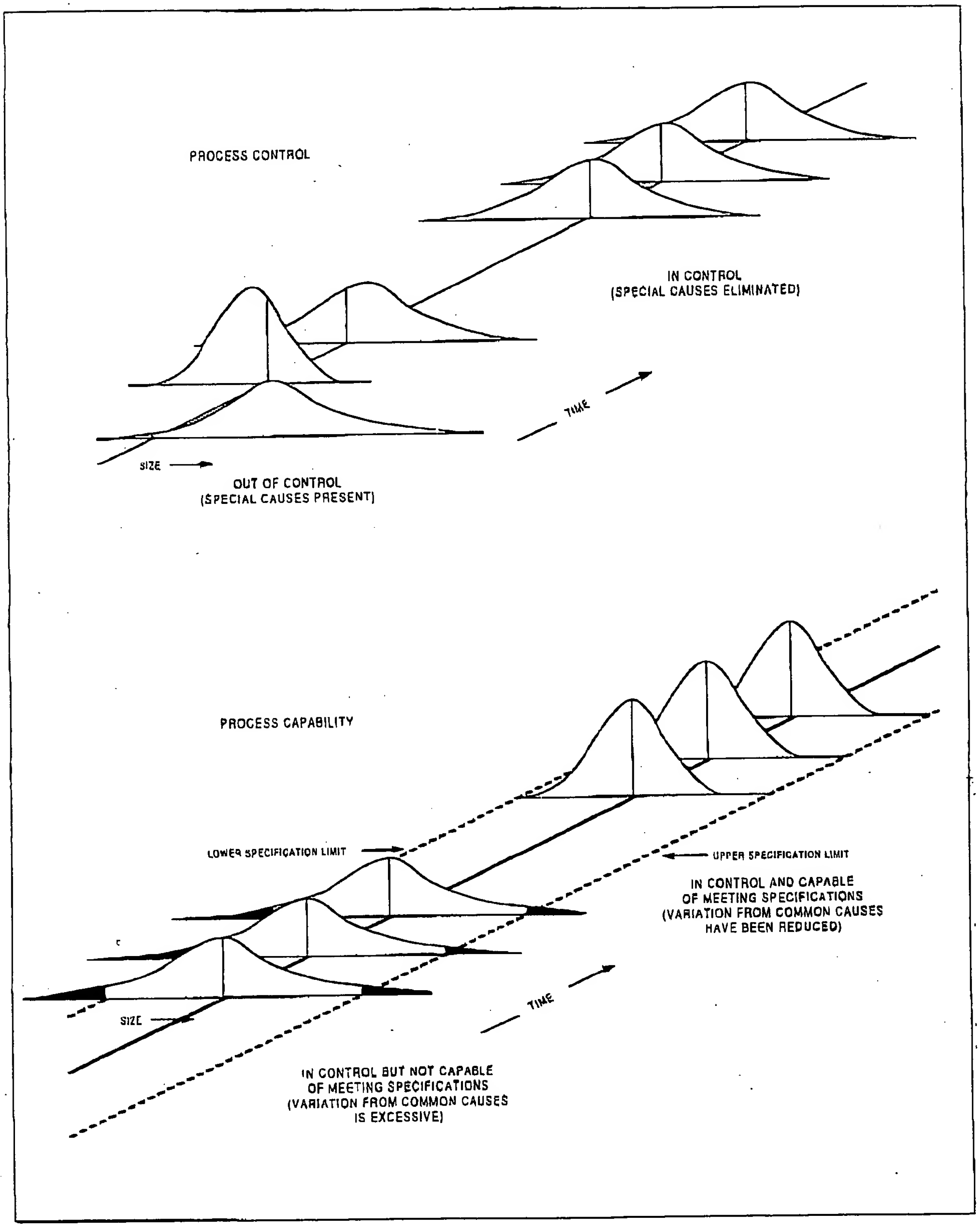


Figure 3. Process Control and Process Capability

Section 5. Process Control and Process Capability (Cont.)

To be acceptable, the process must be in a state of statistical control and the inherent variation (capability) must be less than blueprint tolerance. The ideal situation is to have a Case 1 process where the process is in statistical control and the ability to meet requirements is acceptable. A Case 2 process is in control but has excessive common cause variation which must be reduced. A Case 3 process meets requirements acceptably, but is not in control; special causes of variation must be identified and acted upon. In Case 4, the process is not in control nor is it acceptable; both common and special cause variation must be reduced.

Under certain circumstances, the customer may allow a producer to run a process even though it is a Case 3 process. These circumstances may include:

- The customer is insensitive to variation within specifications (See discussion on the loss function in Chapter II, Section 5).
- The economics involved in acting upon the special cause exceed the benefit to any and all customers. Economically allowable special causes may include tool wear, tool regrind, cyclical (seasonal) variation, etc.
- The special cause has been identified and has been documented as consistent and predictable.

In these situations, the following may be required by the customer:

- The process is mature; i.e., the process has undergone several cycles of continual improvement.
- The special cause to be allowed has been shown to act in a consistent manner over a known period of time.
- A process control plan is in effect which will assure conformance to specification of all process output and protection from other special causes or inconsistency in the allowed special cause.

The accepted practice in the automotive industry is to calculate capability only after a process has been demonstrated to be in a state of statistical control. Capability is used as a basis for prediction of how the process will perform using statistical data gathered from a process. There is little value in making predictions based on data collected from a process that is not stable and repeatable over time. Special causes are responsible for changes in the shape, spread, or location of a process distribution, and thus can rapidly invalidate capability prediction. The various capability indices and ratios are based, among other things, on the requirement that data used to calculate them are gathered from processes that are in a state of statistical control.

Capability indices can be divided into two categories: short–term and long–term. Short–term capability studies are based on measurements collected from one operating run. The data are analyzed with a control chart for evidence that the process is operating in a state of statistical control. If no special causes are found, a short–term capability index can be calculated. If the process is not in control, action regarding the special cause(s) of variation will be required. This type of study is often used to validate the initial parts produced from a process for customer submission. Another use, sometimes called a machine capability study, is to validate that a new or modified process actually performs within the engineering parameters.

When a process has been found to be stable and capable of meeting requirements in the short term, a different kind of study is subsequently performed. Long–term capability studies consist of measurements which are collected over a longer period of time. The data should be collected for long enough, and in such a way, as to include all expected sources of variation. Many of these sources of variation may not have been observed in the short–term study. When sufficient data have been collected, the data are plotted on a control chart, and if no special causes are found, long–term capability and performance indices can be calculated. One use for this study is to describe the ability of the process to satisfy customer requirements over long periods of time with many possible sources of variation included – i.e., to quantify process performance.

I. INTRODUCTION TO CONTINUAL IMPROVEMENT AND STATISTICAL PROCESS CONTROL

Section 5. Process Control and Process Capability (Cont.)

Several different indices have been developed because 1) no single index can be universally applied to all processes, and 2) no given process can be completely described by a single index. For example, it is recommended that C_p and C_{pk} both be used (see Chapter II, Section 5), and further that they be combined with graphical techniques to better understand the relationship between the estimated distribution and the specification limits. In one sense, this amounts to comparing (and trying to align) the "voice of the process" with the "voice of the customer" (see also Reference 22).

All indices have weaknesses and can be misleading. Any inferences drawn from computed indices should be driven by appropriate interpretation of the data from which the indices were computed.

Automotive companies have set requirements for process capability. It is the reader's responsibility to communicate with their customer and determine which indices to use. In some cases, it might be best to use no index at all. It is important to remember that most capability indices include the product specification in the formula. If the specification is inappropriate, or not based upon customer requirements, much time and effort may be wasted in trying to force the process to conform. Section 5 of Chapter II deals with selected capability and performance indices and contains advice on the application of those indices.

Section 5

PROCESS CONTROL AND PROCESS CAPABILITY

The goal of a process control system is to make economically sound decisions about actions affecting the process. This means balancing the consequences of taking action when action is not necessary (overcontrol or "tampering") versus failing to take action when action is necessary (undercontrol). These risks must be handled, however, in the context of the two sources of variation previously mentioned — special causes and common causes. (See Figure 3.)

A process is said to be operating in statistical control when the only sources of variation are from common causes. One function of a process control system, then, is to provide a statistical signal when special causes of variation are present, and to avoid giving false signals when they are not present. This allows appropriate action(s) to be taken upon those special causes (either removing them or, if they are beneficial, making them permanent).

When discussing process capability, two somewhat contrasting concepts need to be considered:

- Process capability is determined by the variation that comes from common causes. It generally represents the best performance (i.e., minimum spread) of the process itself, as demonstrated when the process is being operated in a state of statistical control while the data are being collected, irrespective of where the specifications may be with respect to the process location and/or spread.
- Customers, however, internal or external, are more typically concerned with the overall output of the process and how it relates to their requirements (defined as specifications), irrespective of the process variation.

In general, since a process in statistical control can be described by a predictable distribution, the proportion of in–specification parts can be estimated from this distribution. As long as the process remains in statistical control and does not undergo a change in location, spread or shape, it will continue to produce the same distribution of in–specification parts. The first action on the process should be to locate the process on the target. If the process spread is unacceptable, this strategy allows the minimum number of out–of–specification parts to be produced. Actions on the system to reduce the variation from common causes are usually required to improve the ability of the process (and its output) to meet specifications consistently. For a more specific understanding of the subject of process capability, process performance and the assumptions associated with it, refer to Chapter II, Section 5.

In short: the process must first be brought into statistical control by detecting and acting upon special causes of variation. Then its performance is predictable, and its capability to meet customer expectations can be assessed. This is a basis for continual improvement.

Every process is subject to classification based on capability and control. A process can be classified into 1 of 4 cases, as illustrated by the following chart:

	CONTROL	
MEETING REQUIREMENTS	IN CONTROL	NOT IN CONTROL
ACCEPTABLE	CASE 1	CASE 3
NOT ACCEPTABLE	CASE 2	CASE 4

Single Dip vs Double Dip (Adhesion Values) Study - October 1995

One-way Analysis of Variance for 1 over 1 Braid Construction

```
Analysis of Variance
Source     DF        SS        MS        F        P
Factor      1   592.335   592.335  2075.11    0.000
Error     598   170.698     0.285
Total     599   763.033
                                  Individual 95% CIs For Mean
                                  Based on Pooled StDev
Level       N      Mean     StDev ----+---------+---------+---------+--
Single D  300    7.8336    0.7183                                  (*)
Double D  300    5.8464    0.2343 (*)
                                  ----+---------+---------+---------+--
Pooled StDev =   0.5343              6.00      6.60      7.20      7.80
```

One-way Analysis of Variance for 1 over 1 Braid Construction

```
Analysis of Variance
Source     DF        SS        MS        F        P
Factor      1   224.340   224.340   640.87    0.000
Error     598   209.332     0.350
Total     599   433.673
                                  Individual 95% CIs For Mean
                                  Based on Pooled StDev
Level       N      Mean     StDev ---------+---------+---------+-------
Single D  300    6.9643    0.7994                              (-*-)
Double D  300    5.7413    0.2473  (-*)
                                  ---------+---------+---------+-------
Pooled StDev =   0.5917                  6.00      6.40      6.80
```

Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Single D	300	7.8336	7.8426	7.8294	0.7183	0.0415
Single D	300	6.9643	7.0015	6.9645	0.7994	0.0462
Double D	300	5.8464	5.8430	5.8453	0.2343	0.0135
Double D	300	5.7413	5.7473	5.7443	0.2473	0.0143

Variable	Minimum	Maximum	Q1	Q3
Single D	6.0581	10.1574	7.3589	8.2961
Single D	4.2951	9.4632	6.4028	7.5272
Double D	5.2058	6.4717	5.6903	6.0092
Double D	4.9873	6.4826	5.5891	5.8979

Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Single D	300	7.8336	7.8426	7.8294	0.7183	0.0415

Variable	Minimum	Maximum	Q1	Q3
Single D	6.0581	10.1574	7.3589	8.2961

Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Single D	300	6.9643	7.0015	6.9645	0.7994	0.0462

Variable	Minimum	Maximum	Q1	Q3
Single D	4.2951	9.4632	6.4028	7.5272

Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Double D	300	5.8464	5.8430	5.8453	0.2343	0.0135

Variable	Minimum	Maximum	Q1	Q3
Double D	5.2058	6.4717	5.6903	6.0092

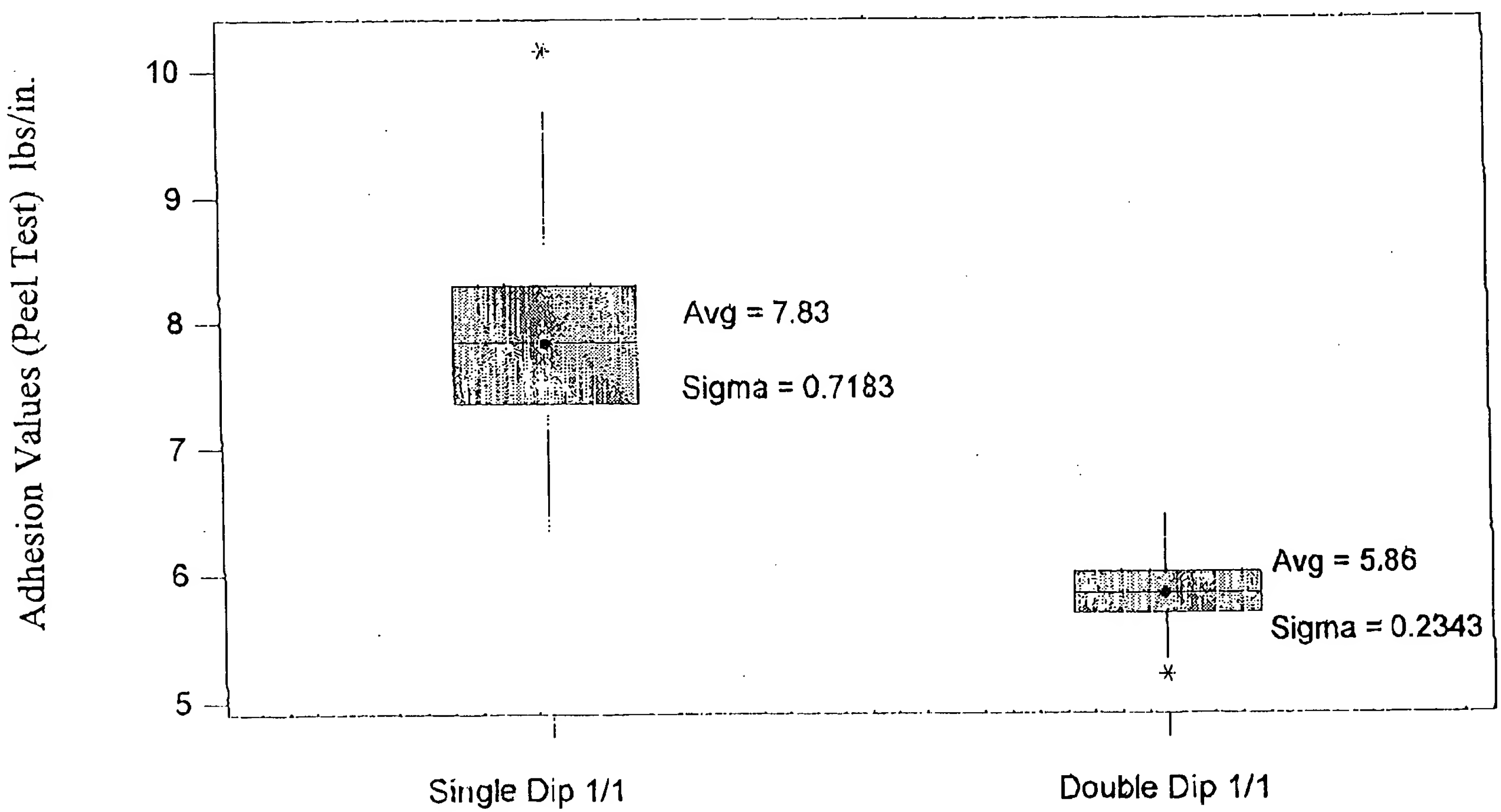
Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Double D	300	5.7413	5.7473	5.7443	0.2473	0.0143

Variable	Minimum	Maximum	Q1	Q3
Double D	4.9873	6.4826	5.5891	5.8979

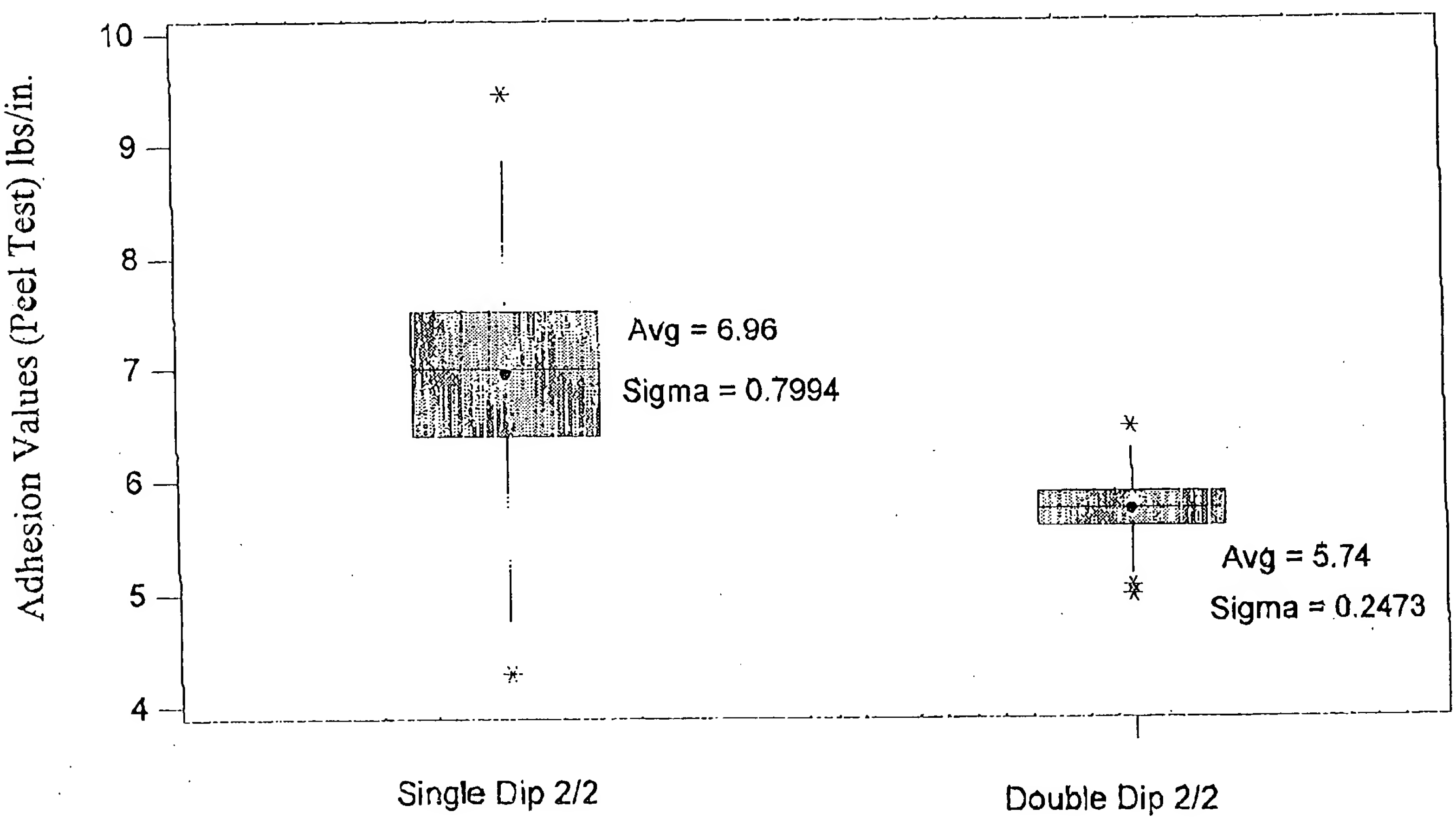
Single Dip vs Double Dip for 1/1 Braid Construction

(means are indicated by solid circles)



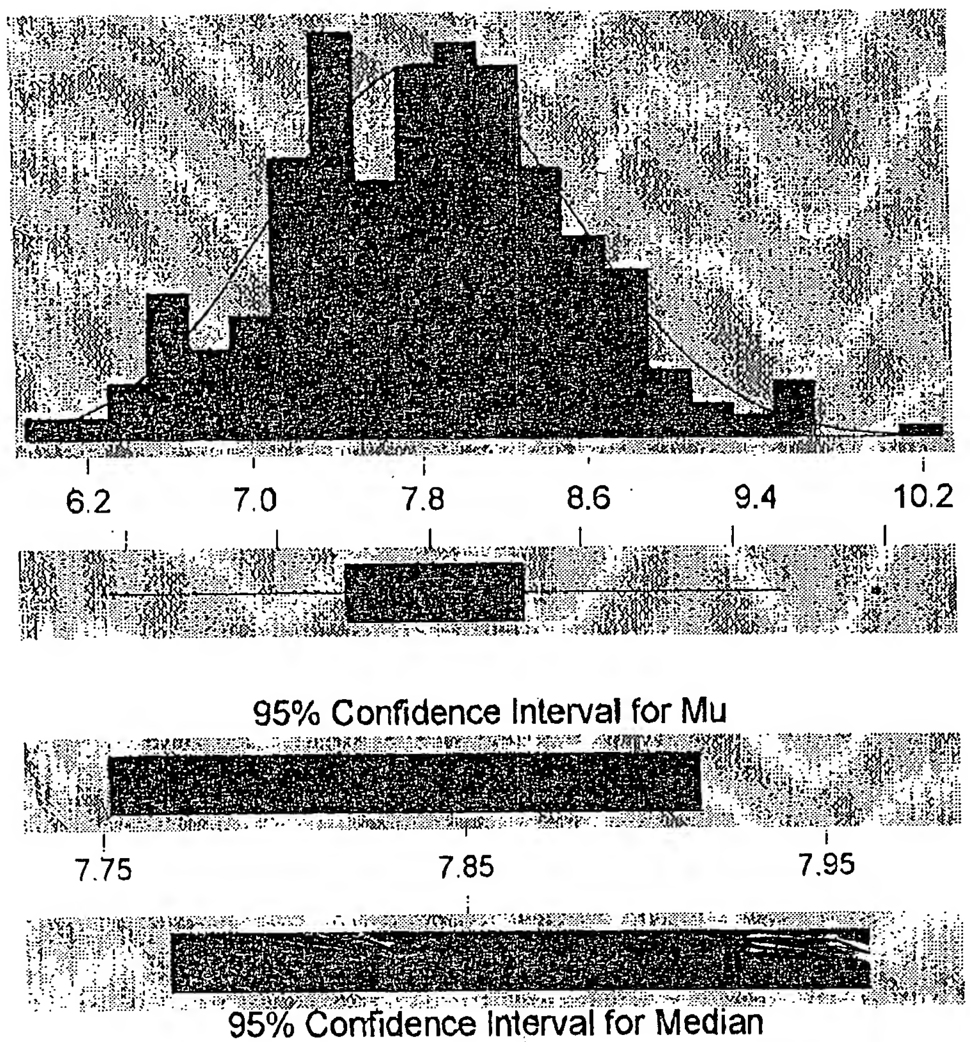
Single Dip vs Double Dip for 2/2 Braid Construction

(means are indicated by solid circles)



Single Dip 1/1 Braid Construction

Teleflex Fluid Systems 1995 - Confidential



Variable: Single Dip 1/1

Anderson-Darling Normality Test

A-Squared:	0.304
P-Value:	0.570
Mean	7.83383
StDev	0.71833
Variance	0.516000
Skewness	5.30E-02
Kurtosis	7.55E-02
N	300
Minimum	6.0581
1st Quartile	7.3589
Median	7.8426
3rd Quartile	8.2961
Maximum	10.1574

95% Confidence Interval for Mu

7.7520	7.9152

95% Confidence Interval for Sigma

0.6651	0.7809

95% Confidence Interval for Median

7.7685	7.9611

Double Dip 1/1 Braid Construction

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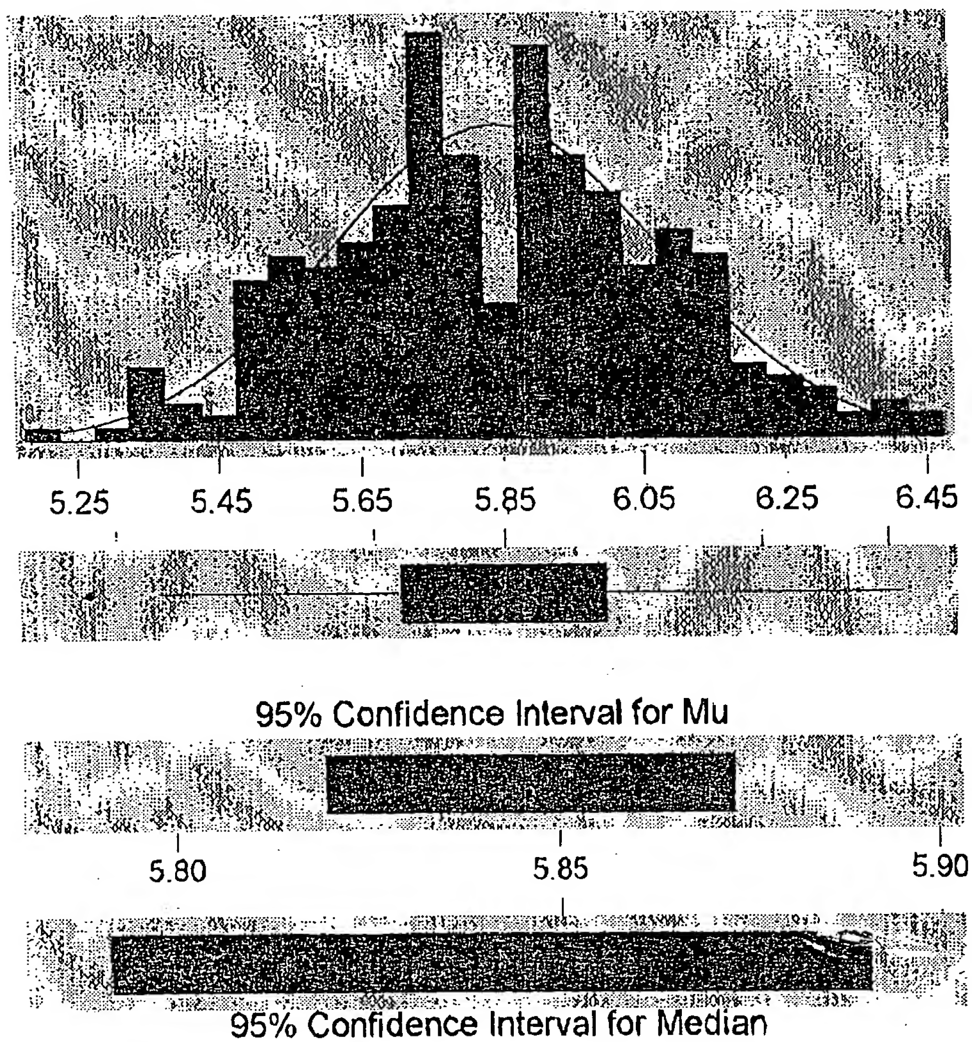


Variable: Double Dip 1/1

Anderson-Darling Normality Test

A-Squared:	0.344
P-Value:	0.486
Mean	5.84645
StDev	0.23430
Variance	5.49E-02
Skewness	4.95E-02
Kurtosis	-2.8E-01
N	300
Minimum	5.20581
1st Quartile	5.69027
Median	5.84297
3rd Quartile	6.00916
Maximum	6.47169

95% Confidence Interval for Mu

5.81983 5.87307

95% Confidence Interval for Sigma

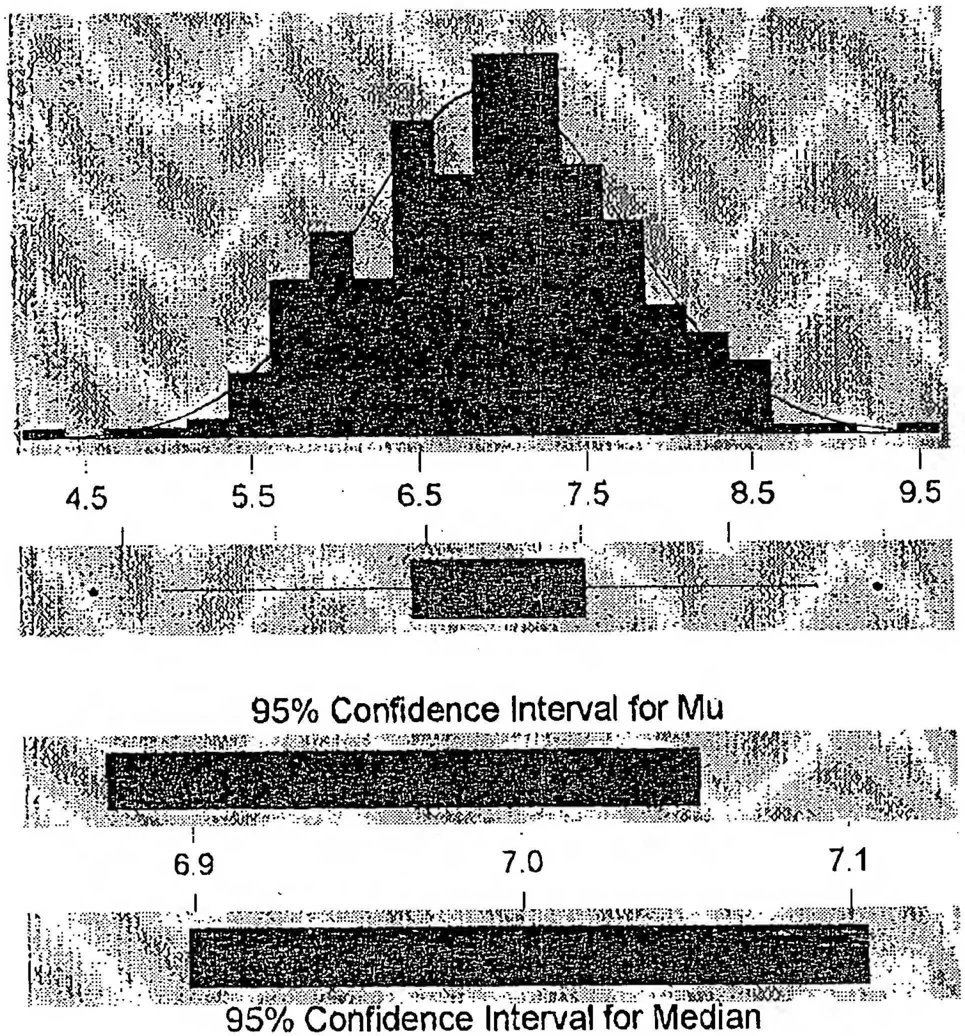
0.21693 0.25471

95% Confidence Interval for Median

5.79137 5.89071

Single Dip 2/2 Braid Construction

Teleflex Fluid Systems 1995 - Confidential



Variable: Single Dip 2/2

Anderson-Darling Normality Test

A-Squared:	0.220
P-Value:	0.834
Mean	6.96426
StDev	0.79936
Variance	0.638975
Skewness	-5.9E-02
Kurtosis	9.44E-02
N	300
Minimum	4.29514
1st Quartile	6.40277
Median	7.00146
3rd Quartile	7.52717
Maximum	9.46324

95% Confidence Interval for Mu

6.87344	7.05508

95% Confidence Interval for Sigma

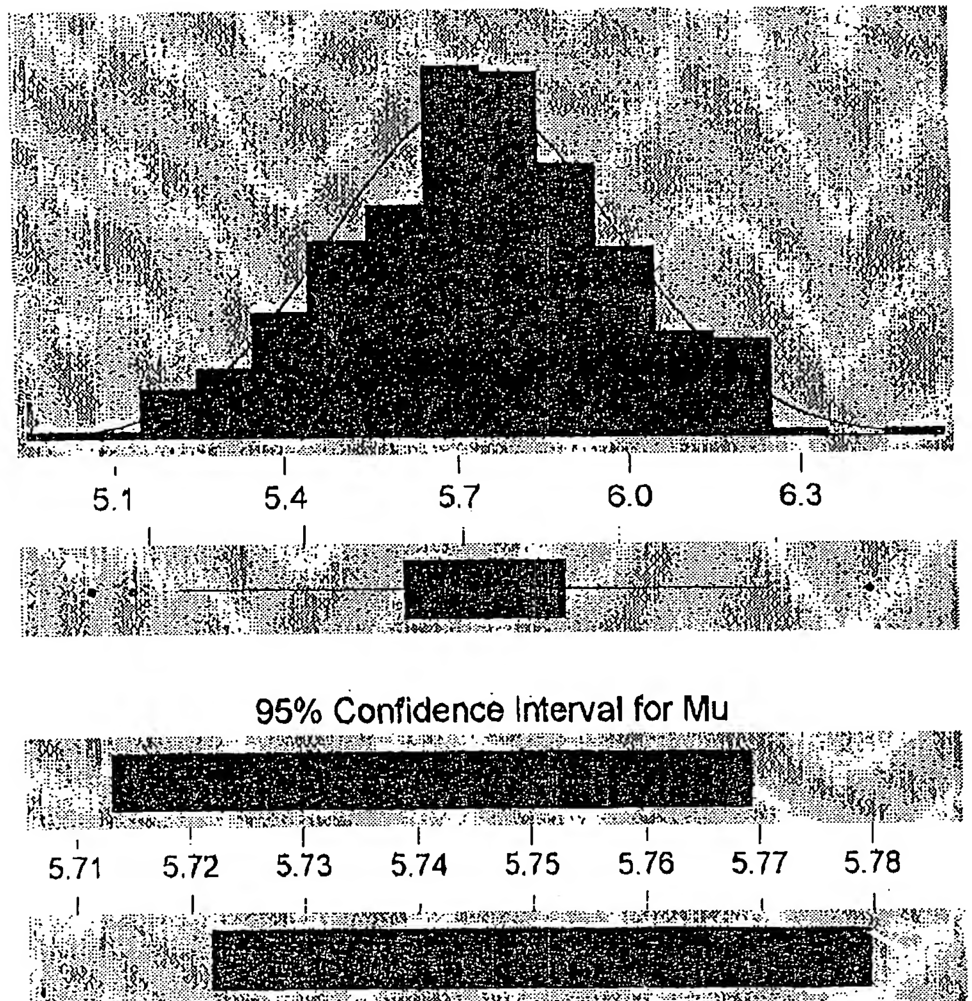
0.74010	0.86901

95% Confidence Interval for Median

6.89793	7.10545

Double Dip 2/2 Braid Construction

Teleflex Fluid Systems 1995 - Confidential



Variable: Double Dip 2/2

Anderson-Darling Normality Test

A-Squared:	0.447
P-Value:	0.279
Mean	5.74131
StDev	0.24725
Variance	6.11E-02
Skewness	-1.8E-01
Kurtosis	6.79E-02
N	300
Minimum	4.98734
1st Quartile	5.58908
Median	5.74728
3rd Quartile	5.89787
Maximum	6.48262

95% Confidence Interval for Mu

5.71322 5.76941

95% Confidence Interval for Sigma

0.22892 0.26880

95% Confidence Interval for Median

5.72174 5.77973

Single Dip vs Double Dip (Adhesion Values) Study - October 1995 - Raw Data			
Single Dip 1/1	Single Dip 2/2	Double Dip 1/1	Double Dip 2/2
8.08	7.64	5.97	5.58
7.97	8.25	5.82	5.47
7.04	6.62	5.98	5.69
7.38	6.40	5.75	5.73
8.63	6.99	6.03	6.12
8.97	7.50	6.03	5.58
7.63	7.77	5.77	5.97
8.37	7.25	5.63	5.87
8.59	7.13	5.71	5.85
7.16	7.61	5.98	5.75
7.88	6.10	6.13	5.38
7.37	6.07	6.02	5.75
7.63	7.60	5.56	5.61
7.31	6.70	5.78	6.11
7.70	7.56	5.96	5.43
7.45	5.38	5.72	5.81
7.28	6.67	5.88	5.58
8.24	9.08	6.04	5.83
7.98	7.24	5.91	5.83
8.13	7.69	5.65	5.69
8.03	5.86	6.23	5.62
7.79	6.98	6.00	5.71
7.57	7.48	5.73	5.79
7.41	7.00	6.04	5.48
8.02	5.06	6.20	5.52
8.04	8.14	5.77	5.61
8.09	6.55	5.94	5.62
7.28	6.19	5.72	5.39
7.23	7.39	5.77	6.06
7.39	7.48	5.76	5.50
8.69	8.46	6.26	5.98
8.19	6.92	5.46	5.77
8.11	7.63	5.57	5.48
8.41	7.36	5.53	5.82
8.06	6.47	5.97	5.22
7.91	6.90	6.10	6.19
8.21	8.05	6.05	5.85
8.41	7.05	6.47	6.11
7.70	6.51	6.35	5.62
7.09	6.05	5.79	5.67
7.23	8.29	5.92	6.01
8.47	7.28	5.62	5.37
6.90	5.86	5.70	5.74
8.30	6.97	5.34	5.86
8.38	6.57	6.39	5.69
8.29	7.48	5.68	5.52
8.32	5.79	6.17	5.30
9.51	7.04	5.51	5.64
7.06	8.45	5.72	6.03

Single Dip vs Double Dip (Adhesion Values) Study - October 1995 - Raw Data			
7.39	6.39	5.98	5.81
7.36	6.83	6.14	5.78
7.28	7.30	5.62	5.98
7.79	6.79	5.97	5.65
7.20	7.24	5.77	6.14
7.13	6.26	5.55	5.76
7.28	6.18	5.53	5.88
6.06	7.15	6.01	5.94
7.77	6.17	6.28	5.82
6.57	5.56	6.05	5.80
7.17	7.13	5.61	5.29
8.31	5.59	5.75	6.01
6.64	6.77	6.04	5.81
7.96	8.58	5.61	5.96
6.95	6.56	5.56	5.99
8.61	7.37	5.90	5.78
7.60	5.85	6.39	5.60
7.48	6.52	6.16	5.68
7.50	8.24	5.81	5.87
6.55	6.10	5.55	6.11
7.37	7.73	5.78	5.76
8.44	7.58	5.59	5.68
7.88	6.77	5.69	5.59
8.69	7.70	6.02	5.84
6.34	6.22	5.40	5.99
6.82	5.86	5.66	5.72
7.57	7.07	6.15	5.50
7.39	7.07	5.81	5.89
7.79	7.00	5.76	5.99
8.53	6.74	6.16	5.81
8.25	6.93	6.14	5.84
7.85	7.90	6.24	5.91
8.13	7.13	5.97	5.85
6.63	6.58	5.94	5.61
6.67	7.30	5.99	5.72
7.45	7.34	5.92	5.51
7.59	6.21	6.16	6.19
6.47	6.46	6.08	5.85
9.64	7.16	5.91	6.08
7.80	6.71	5.77	5.92
8.15	7.60	5.63	6.23
8.40	6.00	5.75	5.51
8.28	6.91	5.67	5.79
8.67	6.18	5.91	5.72
8.09	7.18	5.85	5.88
7.40	6.61	6.13	5.16
7.16	5.72	5.95	6.48
8.24	8.59	5.96	5.54
6.62	7.14	5.73	5.77
8.47	7.60	5.73	5.53
6.53	8.00	5.73	5.80
8.40	6.29	5.79	6.00

Singl Dip vs Double Dip (Adhesion Values) Study - October 1995 - Raw Data			
7.00	6.54	6.09	5.62
7.88	7.56	6.41	5.59
8.10	8.10	6.18	5.35
7.44	7.75	5.58	6.05
7.40	6.05	5.68	5.74
7.72	5.74	5.82	5.36
7.42	6.11	5.56	6.19
8.49	6.95	6.31	5.16
8.79	7.59	5.86	5.40
8.30	8.03	5.98	5.67
7.79	7.93	5.36	5.73
7.25	6.90	5.89	5.63
8.81	6.99	5.97	5.72
7.22	7.20	6.12	5.88
7.31	8.01	5.46	5.74
7.76	7.48	5.88	5.52
7.24	6.11	6.10	5.38
8.04	7.29	5.95	5.78
7.42	7.23	6.43	5.68
7.24	5.74	5.51	5.18
7.15	6.18	6.05	5.50
8.26	6.59	5.74	5.87
7.11	5.99	6.02	5.38
7.98	7.31	5.71	5.27
7.53	7.85	6.12	5.97
7.33	7.47	6.14	5.79
8.43	6.33	5.91	5.65
8.27	7.12	6.36	5.72
8.34	6.46	5.73	5.77
7.47	6.47	5.97	5.84
7.94	6.31	5.92	6.16
7.40	5.72	5.92	5.90
7.29	6.39	5.74	6.00
7.96	5.77	5.91	5.92
7.88	7.87	6.01	5.70
7.75	7.55	5.88	5.66
8.86	7.53	5.79	5.51
6.77	6.78	5.84	5.66
8.76	5.94	5.77	5.69
7.32	6.64	6.13	5.48
8.60	5.85	5.55	5.74
8.53	6.01	5.65	5.63
9.53	6.75	5.82	5.76
8.53	6.89	5.79	5.74
7.24	6.74	5.92	6.16
8.16	7.41	5.32	5.94
7.90	7.01	5.76	6.03
8.28	6.41	5.90	6.07
7.34	6.99	6.18	6.19
9.13	7.92	5.94	5.52
7.82	7.25	6.26	6.01
8.03	7.18	5.63	5.92

Singl Dip vs Double Dip (Adhesion V lu s) Study - October 1995 - Raw Data			
8.62	7.40	6.06	6.22
6.62	8.32	5.21	5.66
7.58	7.31	5.53	6.02
6.61	6.61	5.51	5.80
7.82	7.84	5.93	5.70
6.11	6.82	5.96	5.68
7.58	7.10	6.31	5.82
8.57	5.40	5.80	5.67
8.17	7.24	5.87	6.00
8.07	8.02	6.10	6.03
8.74	7.02	5.84	6.11
6.61	7.60	5.71	6.18
9.68	7.03	6.10	5.64
9.06	4.30	5.51	5.47
7.78	6.70	5.65	5.23
7.92	7.31	5.94	5.61
7.11	7.59	5.63	5.57
7.80	6.80	5.79	5.64
9.04	7.24	6.08	5.74
6.72	7.17	5.63	6.07
8.79	6.11	5.75	6.09
8.53	6.52	5.55	5.26
8.14	4.75	5.77	5.50
8.57	6.18	6.15	6.09
7.39	6.36	5.72	5.36
6.81	6.39	5.91	5.82
8.43	6.79	5.72	5.87
8.34	5.51	5.99	5.90
6.31	7.58	5.83	6.29
8.83	6.42	5.88	5.95
7.58	7.44	5.58	5.73
7.90	5.49	5.48	5.58
7.78	6.11	5.48	5.89
8.84	8.74	5.78	5.85
8.45	6.07	5.88	5.96
8.37	6.39	5.58	5.94
8.58	6.88	6.19	5.41
6.73	8.62	6.04	5.74
8.20	7.75	6.12	5.28
7.52	6.09	6.12	5.58
7.91	7.54	5.60	5.52
7.22	5.79	5.74	5.55
7.77	6.84	5.82	6.21
6.75	7.06	6.04	5.74
7.17	7.67	5.50	5.64
6.10	7.08	5.73	5.86
7.67	6.99	5.86	5.64
8.47	8.24	5.51	5.67
7.62	8.16	6.20	5.87
8.39	7.75	5.35	5.57
6.99	7.33	5.82	5.97
8.50	6.98	5.92	5.41

Single Dip vs Double Dip (Adhesion Values) Study - October 1995 - Raw Data

7.92	7.82	5.52	5.31
7.33	7.35	5.91	5.80
8.06	6.85	5.74	5.98
7.98	7.03	5.70	5.39
8.75	8.61	5.88	6.03
7.29	6.85	5.64	5.57
9.54	6.40	5.76	5.94
7.38	7.94	5.86	5.82
7.64	7.83	5.75	6.24
7.64	7.09	6.11	5.68
8.04	7.00	5.37	5.76
9.30	7.70	6.00	6.18
8.01	8.13	6.10	5.54
8.10	5.80	5.81	5.89
6.75	7.01	5.76	6.22
7.32	7.58	5.41	5.53
7.69	6.10	5.89	5.07
8.47	6.46	5.72	5.89
7.45	7.56	5.50	5.83
7.96	7.65	5.52	5.37
7.42	6.91	5.98	5.41
7.98	7.23	5.67	5.92
10.16	6.42	5.66	5.72
8.03	6.70	5.66	5.65
9.45	8.32	5.67	5.59
7.89	8.46	5.77	5.74
8.23	7.95	5.89	5.81
8.44	9.46	5.60	5.76
8.29	6.56	5.83	5.60
7.23	7.66	6.18	5.71
8.81	6.89	5.88	5.77
7.90	6.76	6.06	5.86
7.78	7.20	5.60	5.77
8.27	7.74	5.56	5.72
7.08	6.58	5.36	5.30
7.77	6.38	5.73	5.70
7.39	6.51	5.89	5.68
7.77	7.24	5.69	5.74
7.05	7.25	5.69	5.81
6.44	6.49	5.79	5.16
8.21	6.78	6.23	5.80
8.65	7.11	5.52	5.81
8.10	7.38	6.11	5.50
7.01	5.64	5.93	5.89
7.76	7.36	6.12	5.82
7.99	7.87	5.93	5.97
8.90	7.28	5.60	6.23
8.11	6.23	5.78	5.90
7.42	7.72	5.55	5.75
7.35	6.21	5.77	5.67
7.02	5.78	6.07	5.96
7.60	7.91	5.52	5.77

Single Dip vs Double Dip (Adh sion Values) Study - October 1995 - Raw Data

7.89	7.34	5.91	5.71
7.75	5.87	5.90	5.65
8.52	6.51	5.97	5.70
7.84	7.06	5.72	5.83
8.37	6.66	5.78	5.90
7.54	5.13	5.92	5.66
7.28	6.80	5.75	5.90
7.46	7.05	6.29	6.04
7.67	7.02	6.05	5.76
8.99	7.11	5.97	5.77
7.78	6.37	6.15	5.52
6.36	6.87	5.81	5.63
7.60	6.04	5.63	5.85
8.24	7.29	5.91	5.47
9.11	5.91	5.88	5.82
6.67	7.49	5.34	5.18
7.71	8.36	5.72	5.78
7.57	7.15	5.84	5.80
8.21	6.97	5.80	5.86
8.08	6.69	5.38	5.92
6.58	8.15	5.55	6.15
7.98	7.84	5.93	5.42
8.14	6.53	6.11	5.34
6.58	6.37	5.98	6.11
8.19	5.50	6.01	5.90
8.86	8.03	6.02	5.36
8.68	5.25	5.74	6.04
9.30	5.94	5.93	5.52
8.15	5.88	5.88	5.69
8.02	5.97	5.83	5.45
7.81	5.81	5.59	5.45
7.37	8.53	5.91	5.55
7.76	7.12	5.68	5.94
8.73	6.00	6.14	5.99
6.75	8.01	5.77	5.62
7.94	7.77	5.95	5.44
8.17	6.82	5.59	5.90
8.74	7.20	6.01	4.99
9.02	7.36	6.09	5.54
7.37	6.45	5.55	5.70
6.07	7.53	6.13	5.74
8.92	7.21	5.80	5.29
8.70	6.78	5.98	5.78